DB=USPT; PLUR=YES; OP=ADJ

L17	L15 and (((data adj1 flow$) with volum$) same (detect$ or determin$ or sampl$))	1	L17
L16	L15 and ((data adj1 flow$) with volum$) L16/1,4,6,	14	L16
L15	709/$.ccls.	17919	L15
L14	(detect$ with data with flow$ with network$ with volume$)	2	L14
L13	L10 and (interface$)	1	L13
L12	L10 and (interface$ with receiv$ with data)	0	L12
L11	L10 and (data adj1 interface$)	0	L11
L10	(estimat$ with data with flow$ with network with volume$)	1	L10
L9	(estimat$ with data with flow$ with network)	30	L9
L8	(sampl$ with data with flow$ with network$) and (estimat$ with volume$)	0	L8
L7	(sampl$ with data with flow$ with network$) same (estimat$ with volume$)	0	L7
L6	(sampl$ with data with flow$ with network$)same (estimat$ with volume$)	0	L6
L5	(sampl$ with data with flow$ with network$ with estimat$ with volume$)	0	L5
L4	(sampl$ with data with flow$ with network$ with estimat$ with volume$)	0	L4
L3	(sample with data with flow$ with network$) and (estimat$ with volume$)	0	L3
L2	(sample with data with flow$ with network$) same (estimat$ with volume$)	0	L2
L1	(sample with data with flow$ with network$ with estimat$ with volume$)	0	L1

END OF SEARCH HISTORY

Refine Search

Search Results -

Term	Documents
DATA	909191
DATUM	15736
FLOW$	0
FLOW	1272345
FLOWA	20
FLOWAALE	1
FLOWABE	1
FLOWABEL	1
FLOWABI	4
FLOWABIE	3
FLOWABIES	1
(L15 AND (((DATA ADJ1 FLOW$) WITH VOLUM$) SAME (DETECT$ OR DETERMIN$ OR SAMPL$))).USPT.	1

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US Patents Full-Text Database
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EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search: L17

Refine Search

Recall Text Clear Interrupt

Search History

DATE: Thursday, May 26, 2005 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set

Previous Doc Next Doc Go to Doc#
First Hit Fwd Refs

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L17: Entry 1 of 1 File: USPT Aug 26, 2003

DOCUMENT-IDENTIFIER: US 6611867 B1
** See image for Certificate of Correction **
TITLE: System, method and article of manufacture for implementing a hybrid network

Detailed Description Text (455):
However, it is not necessary to distinguish explicitly the Sub-Network Manager functionality and Element Manager functionality. In practice, the balance between these aspects will be determined by the deployment constraints imposed by the procurer administration and the internal design constraints of the technology. As a result, the distribution of functionality may vary significantly from one implementation to another. The factors influencing distribution of functionality are illustrated by the following examples: Aggregation of performance and usage data may best be done at the nodal level in order to minimize the volumes of data flows transferred to higher-level management. The design/routing of PVCs must by its nature be performed from a central place, before fanning out to the lower level tasks which are performed at the nodal level. Detailed configuration functions may best be performed at the nodal level in order to provide a fully assured configuration mechanism and to minimize data duplication. Mapping of network-oriented to node-oriented resource choices (e.g. network routings mapped to equipment port choices) may be optimally handled in different ways for each type of technology and for each separate implementation of the same technology. This can lead to different distributions of functionality within each technology domain to support similar capabilities presented at the boundary to higher-level management.

Current US Original Classification (1):
709/224

Current US Cross Reference Classification (1):
709/218

Current US Cross Reference Classification (2):
709/249

Previous Doc Next Doc Go to Doc#

US006611867B1

(12) **United States Patent**
Bowman-Amuah

(10) **Patent No.: US 6,611,867 B1**
(45) **Date of Patent: Aug. 26, 2003**

(54) **SYSTEM, METHOD AND ARTICLE OF MANUFACTURE FOR IMPLEMENTING A HYBRID NETWORK**

(75) Inventor: **Michel K. Bowman-Amuah**, Colorado Springs, CO (US)

(73) Assignee: **Accenture LLP**, Palo, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/386,898**

(22) Filed: **Aug. 31, 1999**

(51) **Int. Cl.**[7] **G06F 15/173**
(52) **U.S. Cl.** **709/224**; 709/218; 709/249
(58) **Field of Search** 709/237, 224, 709/223, 226, 220, 217–218, 235, 249, 201; 455/428; 370/352, 353, 354, 355, 356

(56) **References Cited**

U.S. PATENT DOCUMENTS

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5,586,121 A	*	12/1996	Moura et al.	370/404
5,652,787 A		7/1997	O'Kelly	379/112
5,680,325 A	*	10/1997	Rohner	364/514
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6,215,790 B1	*	4/2001	Voit et al.	370/401
6,272,127 B1	*	8/2001	Golden et al.	370/352

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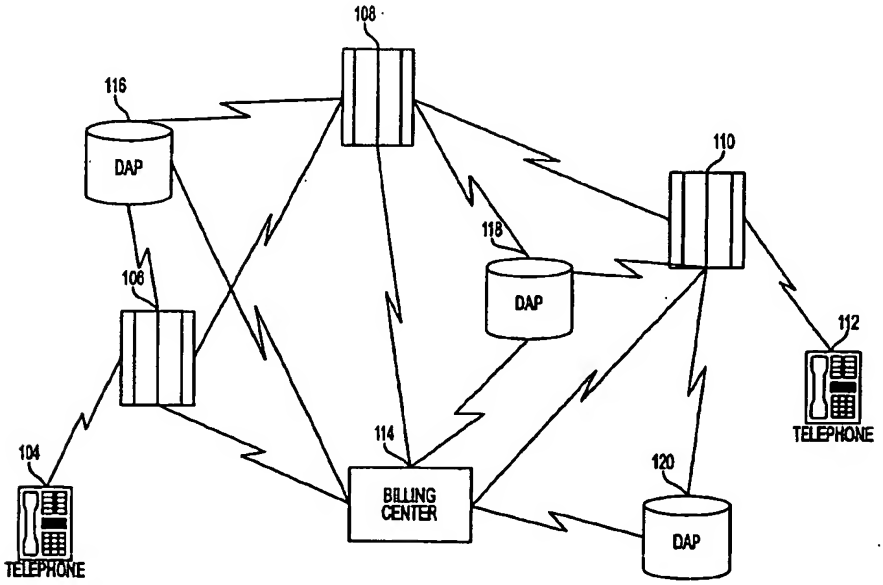
* cited by examiner

Primary Examiner—Ario Etienne

(57) **ABSTRACT**

A system, method and article of manufacture are provided for implementing a hybrid network. Orders for network capacity are issued based on a forecasted demand in order to develop a hybrid network. The hybrid network is analyzed o identify network problems. Then, the hybrid network is provisioned in accordance with the network problems and service requests. Usage of the hybrid network is determined and network usage control functions are initiated based on the determined usage.

18 Claims, 101 Drawing Sheets



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Search Results - Record(s) 1 through 10 of 14 returned.

☐ 1. Document ID: US 6823225 B1

L16: Entry 1 of 14 File: USPT Nov 23, 2004

DOCUMENT-IDENTIFIER: US 6823225 B1
TITLE: Apparatus for distributing and playing audio information

Detailed Description Text (8):
CPU 20 may be a standard microprocessor, such as an INTEL PENTIUM processor, or a custom design microprocessor with a memory device and input/output channels to communicate with the other components of receiver 12. CPU 20 is responsible for receiving and implementing commands from user controls 18 such as selecting a program or adjusting volume, establishing a data connection to and communicating with server 14, controlling the data flow from server 14 through network 16 to network interface 30 and to audio decompresser 24, controlling the audio decompression process, controlling audio output 28, and other functions necessary for controlling receiver 12. For example, CPU 20 may have hardware and/or software inserted commercials into a program. This may require CPU 20 to store commercial data, pausing a program at a desired location, and playing the commercial data.

Current US Cross Reference Classification (1):
709/217

Current US Cross Reference Classification (2):
709/219

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

☐ 2. Document ID: US 6725263 B1

L16: Entry 2 of 14 File: USPT Apr 20, 2004

DOCUMENT-IDENTIFIER: US 6725263 B1
TITLE: Systems and methods for analyzing network traffic

Detailed Description Text (41):
Processing, consistent with the present invention, uses the sent/received traffic volumes calculated per virtual node to generate a traffic matrix. The system 200 then uses the calculated traffic values per virtual node to apportion the total traffic volumes over the individual data flows in the network.

Current US Original Classification (1):

709/223

Current US Cross Reference Classification (2):
709/224

Current US Cross Reference Classification (3):
709/227

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw D

☐ 3. Document ID: US 6611867 B1

L16: Entry 3 of 14 File: USPT Aug 26, 2003

DOCUMENT-IDENTIFIER: US 6611867 B1
** See image for Certificate of Correction **
TITLE: System, method and article of manufacture for implementing a hybrid network

Detailed Description Text (455):
However, it is not necessary to distinguish explicitly the Sub-Network Manager functionality and Element Manager functionality. In practice, the balance between these aspects will be determined by the deployment constraints imposed by the procurer administration and the internal design constraints of the technology. As a result, the distribution of functionality may vary significantly from one implementation to another. The factors influencing distribution of functionality are illustrated by the following examples: Aggregation of performance and usage data may best be done at the nodal level in order to minimize the volumes of data flows transferred to higher-level management. The design/routing of PVCs must by its nature be performed from a central place, before fanning out to the lower level tasks which are performed at the nodal level. Detailed configuration functions may best be performed at the nodal level in order to provide a fully assured configuration mechanism and to minimize data duplication. Mapping of network-oriented to node-oriented resource choices (e.g. network routings mapped to equipment port choices) may be optimally handled in different ways for each type of technology and for each separate implementation of the same technology. This can lead to different distributions of functionality within each technology domain to support similar capabilities presented at the boundary to higher-level management.

Current US Original Classification (1):
709/224

Current US Cross Reference Classification (1):
709/218

Current US Cross Reference Classification (2):
709/249

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw D

☐ 4. Document ID: US 6581102 B1

L16: Entry 4 of 14 File: USPT Jun 17, 2003

DOCUMENT-IDENTIFIER: US 6581102 B1
TITLE: System and method for integrating arbitrary isochronous processing algorithms in general media processing systems

Detailed Description Text (20):
With this understanding of the relationship among components of the present invention, the inventive buffer management mechanism can now be described. Data is carried through the pipeline in the form of buffers. As these buffers flow through the pipeline, filters may need to change the data in place, reformat buffers, and add or remove data from the buffers. The volume of media data that must flow through filters ranges from tens of kilobits per second to tens of megabits per second. Also, the rates at which the media data must flow may be constant or variable. Because of the potentially high volume and isochronous nature of the media data, a key feature of this invention is a method for ensuring that minimal delay is introduced as the data flows through the pipeline. Specifically, when data is introduced into the media server, it is placed in an internal buffer (deinternalBuffer) which is then linked to an abstraction of the data in that buffer (deBuffer). Referring now to FIG. 3, the relationship between deInternalBuffers (302a, 302b) and deBuffers (301a, 301b, 301c, 301d) is illustrated. An internal buffer may be referenced by one or more deBuffers. Each of the deBuffers referencing an internal buffer may point to the same data, or to a subset of the data or to different offsets within the data. Block 303b and 303c represent internal, overlapping regions of deinternalBuffer (302a) which are referenced by deBuffers (301a and 301b, respectively). The internal region (303d) of deInternalBuffers (302b) illustrates how headers (304a, 304b, 304c) and trailers (306) can be appended to file data as the buffer is processed by a filter. If data arrives at a filter in multiple buffers, even if the buffers arrive on different pipes, the data can be chained, by setting flags on the buffers, into a single logical buffer, without copying the data within those buffers. Blocks 301b, 301c, 301d of FIG. 3 depict data which is split over multiple internal buffers but chained so it can be sent as a single packet of data.

Current US Original Classification (1):
709/231

Current US Cross Reference Classification (1):
709/236

5. Document ID: US 6449615 B1

L16: Entry 5 of 14 File: USPT Sep 10, 2002

DOCUMENT-IDENTIFIER: US 6449615 B1
** See image for Certificate of Correction **
TITLE: Method and system for maintaining the integrity of links in a computer network

Drawing Description Text (12):
FIG. 10 is a data flow diagram generally illustrating a method for initializing a volume in accordance with the invention;

Current US Cross Reference Classification (1):
709/200

Current US Cross Reference Classification (2):
709/217

Current US Cross Reference Classification (3):
709/220

☐ 6. Document ID: US 6330008 B1

L16: Entry 6 of 14 File: USPT Dec 11, 2001

DOCUMENT-IDENTIFIER: US 6330008 B1
TITLE: Apparatuses and methods for monitoring performance of parallel computing

Detailed Description Text (22):
In the visualization 106, the volume of data flow in a given instance of a datalink is indicated both by the relative density of the line representing that link and in the velocity of that line. The relative density of given line is a function of what percent of its length is comprised of line segments in which pixels which are turned "on", or colored, as opposed to line segments in which pixels are "off". or transparent. We often refer to the "on" segments as "noodles". The velocity of a datalink instance is the rate at which its noodles travel downward along the datalink intance's associated line. A user watching the visualization operates sees noodles fall down between levels somewhat like rain drops. He or she can see an indication of the speed of the data flowing along each such datalink instance as a function of both its density and speed.

Detailed Description Text (25):
As the number of operator instances grows judging the data flow between parallel operators can become somewhat akin to judging the volume of rainfall by judging the size and velocity of rain drops. As will be explained below in greater detail, the visualization tool comes with a 3D navigation tool, which enables the user to rapidly zoom in on sites of interest within the data flow graph so individual datalink instances can be made to stand out even among many thousands of such instances.

Current US Cross Reference Classification (1):
709/230

Current US Cross Reference Classification (2):
709/231

Current US Cross Reference Classification (3):
709/232

Current US Cross Reference Classification (4):
709/235

7. Document ID: US 5828835 A

L16: Entry 7 of 14 File: USPT Oct 27, 1998

DOCUMENT-IDENTIFIER: US 5828835 A
TITLE: High throughput message passing process using latency and reliability classes

Brief Summary Text (6):
Because bridge/routers are designed to interconnect a variety of networks, the volume of data flow through the router can be very high. The ability to move large amounts of data, according to a wide variety of networking protocols, makes the bridge/router a unique class of high performance data processing engines.

Current US Original Classification (1):
709/200

Current US Cross Reference Classification (1):
709/232

Current US Cross Reference Classification (2):
709/233

Current US Cross Reference Classification (3):
709/235

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw D

8. Document ID: US 5802278 A

L16: Entry 8 of 14 File: USPT Sep 1, 1998

DOCUMENT-IDENTIFIER: US 5802278 A
TITLE: Bridge/router architecture for high performance scalable networking

Brief Summary Text (6):
Because bridge/routers are designed to interconnect a variety of networks, the volume of data flow through the router can be very high. The ability to move large amounts of data, according to a wide variety of networking protocols, makes the bridge/router a unique class of high performance data processing engines.

Current US Original Classification (1):
709/249

Current US Cross Reference Classification (4):
709/243

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw D

9. Document ID: US 5592622 A

L16: Entry 9 of 14 File: USPT Jan 7, 1997

DOCUMENT-IDENTIFIER: US 5592622 A
** See image for Certificate of Correction **
TITLE: Network intermediate system with message passing architecture

Brief Summary Text (5):
A network router is a system which allows a plurality of local area networks to communicate with one another, even when such networks are operating under different protocols. The router will have an interface to each of the networks using its resources. Users of the respective networks address packets to the router in order to transmit packets to other networks coupled to the router. When a network router is connected to a large number of networks, the possibility that a very large volume of data will be flowing through the router at a given time is quite high.

Current US Original Classification (1):
709/207

Current US Cross Reference Classification (1):
709/234

Current US Cross Reference Classification (2):
709/250

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Ds

10. Document ID: US 5526283 A

L16: Entry 10 of 14 File: USPT Jun 11, 1996

DOCUMENT-IDENTIFIER: US 5526283 A
TITLE: Realtime high speed data capture in response to an event

Detailed Description Text (7):
One potential usage of this particular invention is the ability to be able to trace activity on network links in realtime without the need to post-process data and without having extensive amounts of memory required to accomplish this process. The EDI mechanism provides a super efficient way of identifying specific events that we may wish to capture data on. By capturing data we mean, capturing some amount of bits from the media either predefined amount of bits or bits that are defined from the information on the data media itself. In other words, using something similar to indirect addressing Ser. No. 08/024,542, filed Mar. 1, 1993, and we can refer to another invention disclosure on that. For example, if you look at current trace techniques today, they usually trace the header as well as the customer's data that's embedded in a frame. The efficiency of the architecture such as SNA for example, says that when a customer has a lot of data to send the header represents only a few percentage points of the total amount or total volume of data transmitted, where the customer's data or the pay load of the frame represents 90

to 95 percent typically of the data flowing over the media. Currently today, most programs try to capture as much as they possibly can from the media, which means including the header and customer data. With this invention disclosure, we're enabling you to, in realtime, identify the header and trace only the header, in which case you can reduce the amount of data collected typically by 95 percent. In other words, a 95 percent reduction in the amount of data that's actually collected and returned to a location. Also, the same technique can be carried to even finer levels of detail and granularity by the EDI identifying that a specific event occurs, in which case we can capture specific fields, specific bytes or even specific bits of information and return only that to some location in the network to either reconstruct something of a flow of data over a period of time, or to do some kind of analysis or control the network environment. This data capturing facility invention coupled with the EDI provides us with extreme selectivity of the data that we capture from individual bits up to as much data as it goes across the media as you want.

Current US Original Classification (1):
709/224

Term	Documents
DATA	909191
DATUM	15736
FLOW$	0
FLOW	1272345
FLOWA	20
FLOWAALE	1
FLOWABE	1
FLOWABEL	1
FLOWABI	4
FLOWABIE	3
FLOWABIES	1
(L15 AND ((DATA ADJ1 FLOW$) WITH VOLUM$)).USPT.	14

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Search Results - Record(s) 11 through 14 of 14 returned.

☐ 11. Document ID: US 5404451 A

L16: Entry 11 of 14 File: USPT Apr 4, 1995

DOCUMENT-IDENTIFIER: US 5404451 A
**** See image for Certificate of Correction ****
TITLE: System for identifying candidate link, determining underutilized link, evaluating addition of candidate link and removing of underutilized link to reduce network cost

Detailed Description Text (3):
The links TL.sub.1 -TL.sub.19 between the terminals and the concentrators are data lines leased from local telephone service providers, as are the links CL.sub.1 - CL.sub.8 between the concentrators and backbone nodes. The backbone nodes are connected by backbone data link lines BL.sub.1 -BL.sub.5, which are high-volume leased data lines such as T1 fiber optic lines leased from a long-distance telephone service provider such as U.S. Sprint and conventional 56 k lines from a provider such as AT&T. The backbone nodes N and the backbone links BL collectively form the backbone of the data communications network. The terminals S, concentrators C, and data links TL and CL collectively form the local access network. Data is transmitted between the terminals S through the backbone and the local access network. The amount of data which flows per unit time through the network from one terminal to another terminal is the traffic volume TS between the terminals.

Current US Original Classification (1):
709/241

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw D

☐ 12. Document ID: US 5216591 A

L16: Entry 12 of 14 File: USPT Jun 1, 1993

DOCUMENT-IDENTIFIER: US 5216591 A
TITLE: Method for efficient distributed data communications network backbone node location

Detailed Description Text (3):
The links TL.sub.1 -TL.sub.19 between the terminals and the concentrators are data lines leased from local telephone service providers, as are the links CL.sub.1 - CL.sub.8 between the concentrators and backbone nodes. The backbone nodes are

connected by backbone data link lines BL.sub.1 -BL.sub.5, which are high-volume leased data lines such as T1 fiber optic lines leased from a long-distance telephone service provider such as U.S. Sprint. The backbone nodes N and the backbone links BL collectively form the backbone of the data communications network. The terminals S, concentrators C, and data links TL and CL collectively form the local access network. Data is transmitted between the terminals S through the backbone and the local access network. The amount of data which flows per unit time through the network from one terminal to another terminal is the traffic volume T between the terminals.

Current US Cross Reference Classification (4):
709/241

13. Document ID: US 4825362 A

L16: Entry 13 of 14 File: USPT Apr 25, 1989

DOCUMENT-IDENTIFIER: US 4825362 A
TITLE: Network system for data communication in a vehicle

Brief Summary Text (4):
To cope with this problem, a network system for vehicles is utilized. Data is communicated among computers by linking on a common data communication line. However, in a motor vehicle there are problems in sharing data by various computers. First, various types of computers have already been developed. These computers are used in different "combinations". Secondly, some of these computers are marketed as optional products. As the number of optional products utilized increases, data flowing on the communication line increases in volume. The transfer of control data among the individual computers becomes inadequate.

Current US Original Classification (1):
709/233

Current US Cross Reference Classification (1):
709/221

Current US Cross Reference Classification (2):
709/224

14. Document ID: US 4583164 A

L16: Entry 14 of 14 File: USPT Apr 15, 1986

DOCUMENT-IDENTIFIER: US 4583164 A
TITLE: Syntactically self-structuring cellular computer

Brief Summary Text (115):
U.S. Pat. No. 3,978,452 discloses a data driven network of uniform processing or function modules and local storage units which may be partitioned to accommodate various concurrent operations. The same machine is also described in "The architecture and system method of DDM1: a recursively structured data driven machine," by A. L. Davis, Conference Proceedings of the 5th Annual Symposium on Computer Architecture, April 1978, pp. 210-215, and also in "A data flow evaluation system based on the concept of recursive locality," by A. L. Davis, AFIPS Conference Proceedings, Volume 48, NCC, 1979, pp. 1079-1086. DDM1, the machine described in these references, is a tree machine that executes programs expressed in the form of graphs called DDNs: data-driven nets. Davis considers DDNs to be too low-level for direct use as a programming language.

Current US Cross Reference Classification (1):
709/252

Term	Documents
DATA	909191
DATUM	15736
FLOW$	0
FLOW	1272345
FLOWA	20
FLOWAALE	1
FLOWABE	1
FLOWABEL	1
FLOWABI	4
FLOWABIE	3
FLOWABIES	1
(L15 AND ((DATA ADJ1 FLOW$) WITH VOLUM$)).USPT.	14

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